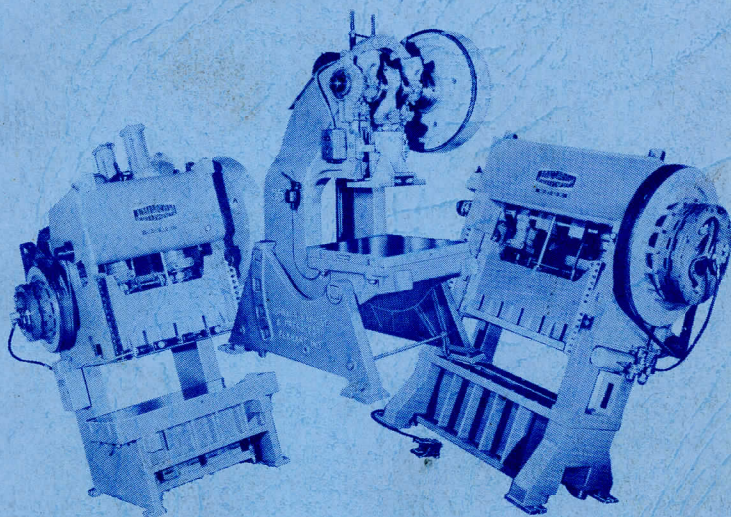


# MAINTENANCE AND PARTS MANUAL

NO. 1956



for  
16 TO 125 TON  
*Open Back Inclined*  
**Power Presses**  
**Gap and Straight Side Presses**

**JOHNSON MACHINE & PRESS CORP.**

620 WEST INDIANA AVENUE  
ELKHART, INDIANA



# INSTRUCTION

AND

# PARTS BOOK

No. 56



SOLD BY  
HARRON, RICKARD & MCCONE  
2070 BRYANT STREET  
SAN FRANCISCO, CALIF.

JOHNSON MACHINE AND PRESS CORP.

Elkhart - Indiana  
U.S.A.

## **SPECIAL NOTICE**

**Adequate SAFETY GUARDS**  
must be provided at all times  
by the owner of this press to  
prevent the operator's hands  
from entering the die space  
while the ram is moving.

## **FOREWORD**

This book contains instructions and a general parts list for your JOHNSON PRESS. Keep it for future reference.

## **INSPECTION**

JOHNSON PRESSES are carefully engineered and factory tested under load. Each press is inspected and found to be satisfactory before shipping. Your press will give you the maximum in production if you keep it properly adjusted, well lubricated, and operated within its rated capacity.

## **FACTORY GUARANTEE**

With respect to Punch Presses and Parts manufactured by the JOHNSON MACHINE & PRESS CORP., Vendor warrants the same to be free from defects in material and workmanship under ordinary and normal use and service for a period of six (6) months from date of delivery, the obligation under this warranty being limited to supplying the buyer, F.O.B. Vendor's plant, replacements of any goods or parts thereof which shall be found to the satisfaction of the Vendor, to be defective upon examination by its properly authorized representative or representatives. Vendor will, in no event, be liable for damages and/or injuries which may be incurred by the buyer by virtue of defective material or workmanship in the articles or materials supplied under any contract accepted by the Vendor or its authorized representatives. Electrical and other purchased parts carry the guarantee of the manufacturer.

## **WHEN YOUR O.B.I. PRESS ARRIVES**

Your Johnson Press was shipped from the factory skidded and completely intact. It was "run in", tested and checked carefully and barring the hazards in transit, should reach you ready to set up and run.

Upon arrival you should:

1. Remove all anti-rust preservative from the crank and clutch parts.
2. Presses with pin type clutches should have the lock bolt and latch and the slot in the crankshaft through which the Lock Bolt travels adequately lubricated. Turn the Crank over by hand until the Lock Bolt is visible and with a screw driver actuate the Lock Bolt several times

to make sure that the lubrication is causing it to work freely without "drag".

3. Tighten the brake before starting the press.

Presses having the "lip" type Latch part 112S, instead of the "Straight" type Latch, part 112, are cautioned against depending on the lip of the Latch to stop the press. The lip is in no wise designed or intended to be "the brake" or even an "emergency brake" to stop the crankshaft. In the event that the brake becomes "loose", the normal distance between the Lock Bolt and the lip of the Latch will decrease in proportion to the looseness until the two parts come into contact. This contact may cause the lip type Latch and/or the Lock Bolt to break, depending upon the speed and/or frequency of the impact. The brake should be kept sufficiently tight at all times so that contact of the lip of the lip type Latch and the Lock Bolt is impossible.

## **BRAKE ADJUSTMENT**

To adjust the brake properly on pin clutch presses, release the locknut on the brake bolt. Tighten the hand nut until the tripping mechanism continually "Clicks" after being tripped. This repeated clicking is an indication that the brake is slightly too tight and the Lock Bolt is being touched by the wheel pins. Release the brake tension a half turn and trip the press. If the "Clicking" does not disappear then release the brake still more. Repeat this procedure until there is freedom from "Clicking". The brake should then be in proper tension. As a double check make sure the small arrows on the crankshaft and right hand main bearing cap stop opposite each other.

## **LUBRICATION — Standard Grease or Oil System**

All alemites or oil cups should be serviced 2 to 4 times daily, or oftener, depending on the nature of the operation. Apply light grease on the inside face of the (see location X on page 17) crankshaft, on the right of the right-hand bearing cap. Oil the ball joint in the ram adjusting screw (61) and oil all hinge and pivot points of the pedal, lever, and tripping mechanism.

## **LUBRICATION .... Bijur One Shot Systems (Manual)**

By the term "one shot" is meant each time the pressure lever is worked all points serviced are lubricated, but this does not mean, that one shot per day is sufficient. The pressure lever on the manual systems must be worked often, depending on the use that is being made of the press.

# LUBRICATION SCHEDULE

POINT TO BE LUBRICATED	TYPE OF LUBRICANT	METHOD	SCHEDULE	REMARKS
Main Bearing	Oil or Grease	Automatic	Automatic	On Automatic or One Shot Lubricators, Fill Reservoir as Required with S.A.E. #50 Mineral Oil or Equivalent.
Pitman Bearing	One Shot	Grease Gun	Every Hour	
Gibs	Oil Can	Oil Can	Every Hour	
Lock Bolt	Light Oil	Oil Can	Daily As Required	*See Note Below.
Flywheel, Bull Gear and Backshaft	Grease	Grease Gun	1 Shift Oper. — 6 Mo. 2 Shift Oper. — 4 Mo. 3 Shift Oper. — 2 Mo.	To Grease Flywheel and Bull Gear, Remove Plug Opposite Alemite Fitting. Grease and Replace Plug.
Roller Bearings				
Solenoid Valve	Light Oil	Filter	Daily As Required	Fill Oil as Required with S.A.E. #10 Mineral Oil or Equivalent.
Air Counterbalance Cylinder		Regulator		
Tripping Mechanism and Ball Joints	Light Oil	Oil Can	Once Each Shift	
Bull Gear Teeth	Grease	Hand	As Required	Heavy Bodied High Adhesive. Extreme Pressure Graphite Grease.

## \*NOTE!

The lock bolt is a very important part of the press and can cause an endless amount of trouble if not kept well lubricated and clean. To check if lock bolt is adequately lubricated, turn the crank over by hand until lock bolt is visible and with screw driver, actuate the lock bolt several times to make sure that the lubrication is allowing it to work freely without drag.

Whenever the lever is worked it produces pressure on the oil line. When it has returned to the original position there is no longer pressure on the oil line and consequently the machine is not being lubricated and should therefore be worked again to restore the oil pressure. The automatic systems are activated by the rotation of the crankshaft.

*Warning:* Use only mineral oil equivalent to SAE No. 50.

## BIJUR LUBRICATING EQUIPMENT PARTS LIST

### Models 1 through 55 Press

PART No.	NAME OF PART	QUANTITY	QUANTITY
		Manual System	Automatic System
D-2276	Lubricator Unit RJB .....		1
D-2214	Reservoir Assembly 3 Pint .....		1
D-2076	Lubricator HIA .....	1	
B-5107	Linkage Assembly Type "FF" .....		1
B-5022	Linkage Assembly Type "FM" .....		1
B-5166	Linkage Lock Nut .....		2
B-1084	Meter-Unit FSA1—Right Gib .....	1	1
B-1085	Meter-Unit FSA-2—Pitman Bearing .....	1	1
B-1072	Meter-Unit FTA-1—Main Bearings .....	4	4
B-1099	Meter-Unit FTC-1—Left Gib .....	1	1
B-3065	Junction 3-Way—Pitman .....	1	2
B-3530	14" Hose Assembly "SS"—Pitman .....	1	1
B-5611	Pressure Gauge Assembly 100# "SF" .....	1	1
B-1095	Compression Nut .....	2	3
B-1371	Compression Bushing .....	14	17
B-1061	Compression Sleeve .....	16	20
A-2435	Tubing Clip, Single .....	6	6
5S20	$\frac{5}{32}$ " O.D. x .020" Wall Steel Tubing .....	24 Ft.	24 Ft.

### For Models 7, 8, 9 and 10

D-1726	Lubricator DIA .....	1	
B-1086	Meter-Unit FSA-3—Pitman Bearing .....	1	1
B-3288	Junction 2-Way—Right Main .....	1	1
B-1092	Junction 3-Way—Pitman .....	1	1
B-3531	16" Hose Assembly "SS"—Pitman .....	1	1
B-2488	Closure Plug—Left Main .....	1	

## TO REPLACE THE LOCK BOLT

To remove the Lock Bolt it is not necessary to completely remove the flywheel from the press. Simply slide the wheel off shaft the length of the lock bolt. It then can be removed from the crank for inspection or replacement.

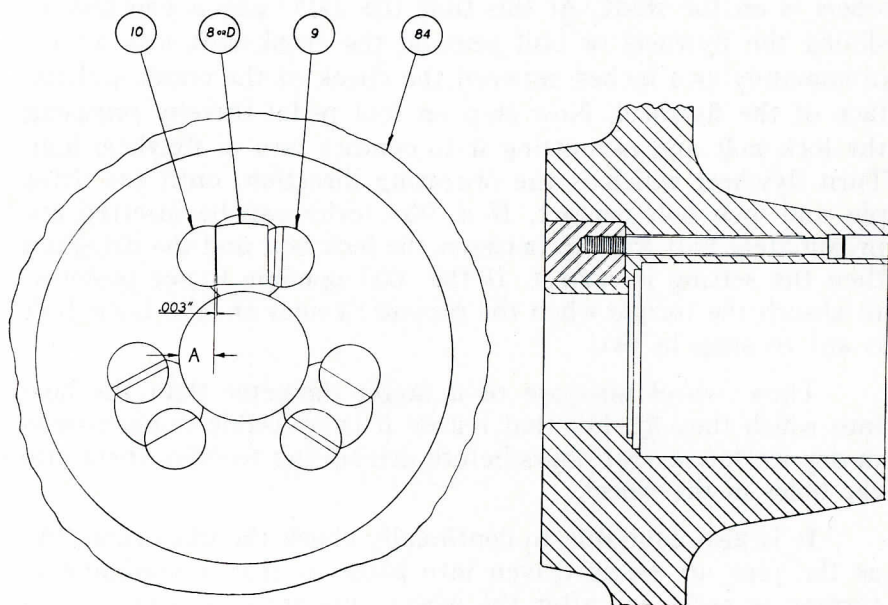
The Lock Bolt should be smooth and kept lubricated with light oil at all times. Also grease crankshaft face marked (X) on page 17.

## WHEEL PINS

The Flywheel (84) and the Bull Gear (44) are fitted with three drive pins (10) and three back-up pins (9). The drive pins (10) have a square end with a notch while the back-up pins (9) have an angular end with a notch. (See page 14).

## TO REMOVE WHEEL PINS

Remove wheel and lay it face down over 2x4's. Remove flywheel cover, part 141. Holes are drilled through hub into bottom of wheel pin holes. Fill holes with  $\frac{1}{2}$ " hardened dowel pins and hit hard with a sledge hammer.



## TO REPLACE WHEEL PINS

The careful setting of drive pins is necessary for proper operation of the lock bolt and tripping mechanism. The drive pins must be set so that the lock bolt first strikes the drive pins at the point farthest from the center of the wheel. This is accomplished by setting the drive pin so that the face of the lock bolt and the face of the drive pin contact each other at a slight angle. This angle should be such that the gap between the drive pin and the lock bolt is approximately .003" pie-shaped at the inner point of contact when the outer point of the lock bolt and the wheel pin have met. This setting can be made with a straight edge and a scale (see photograph) by placing the straight edge along the flat face of the drive pin and extending the line of this face toward the center of the wheel. The distance from this line to the inside of the wheel will then give you a dimension "A" (see page 9) which will determine the setting of the pins. This dimension "A" will vary with the different wheels and wheel pins. Below is a chart of the different dimensions required for setting the various wheel pins.

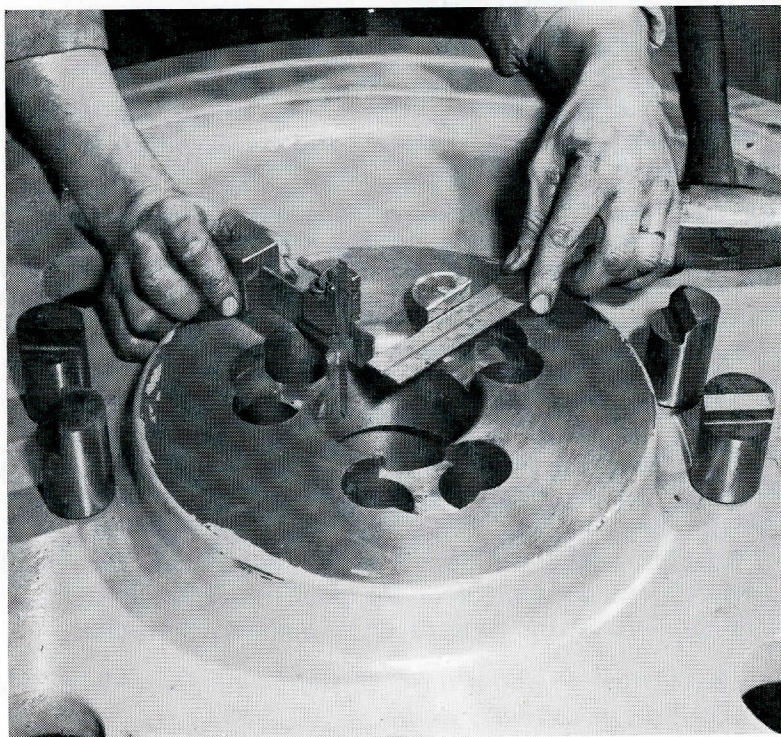
This setting must be checked further with a feeler gage when the pins are in actual contact with the lock bolt while the wheel is on the shaft. At this time the .003" gap is checked by sliding the flywheel or bull gear on the crankshaft leaving approximately two inches between the cheek of the crank and the face of the flywheel. Now step on foot pedal thereby releasing the lock bolt and permitting it to contact face of flywheel hub. Turn flywheel which is the operating direction, until the drive pin and lock bolt contact. If a .003 feeler can be inserted approximately half way up between the lock bolt and the drive pin then the setting is correct. If the .003 opening is not provided to absorb the torque when the pressure comes on, the Lock Bolt is apt to snap in two.

These wheel pins are of a larger diameter than the hole into which they fit. For that reason it is advisable to pack them in dry ice for several hours before attempting to drive them into the holes in the wheel.

It is also advisable to continually check the dimension "A" as the pins are being driven into place so that a minimum of turning is necessary after the wheel pins are driven in.

## CHART

PRESS	A—DIMENSION
1	.6735 or 43/64
2	.6437 or 41/64
3	.8155 or 13/16
4½	1.063 or 1-1/16
4½ Wide Lock Bolt (8-4½)	1.031 or 1-1/32
5	1.328 or 1-21/64
5 Wide Lock Bolt (8-5)	1.203 or 1-13/64
7	1.781 or 1-25/32
8	1.953 or 1-61/64



## **TROUBLE SHOOTING — Pin Clutch Presses**

1. If press ram over-travels or does not stop in the 12 o'clock position:—  
The most likely cause is a loose brake.
  2. If press won't trip:—  
Is ram now past center? If so, part D or 8 Lock Bolt has wedged against the lip on part 112S latch (if lip latch is used). This has occurred because the brake was not tight enough. To correct this situation back up ram by using bar in left end of crank, tighten brake, then operate press.
  3. If lock bolt (part D or 8) breaks:—  
This part is apt to break when press is overloaded.  
Check broken lock bolt for evidence of galling. If galling occurs, lock bolt cannot be withdrawn by latch (112) under load and therefore breaks. If slot in crankshaft through which lock bolt travels has become galled it must be reconditioned as follows:  
    remove outer ring,  
    mill and weld slot,  
    remill slot to size,  
    sweat on new ring,  
    turn and grind OD of ring. (This can be done at the factory for a nominal charge.)
  4. If ram comes down in "jumps":—  
Check for broken lock bolt springs part L.  
Check driving edges of part D or 8 lock bolt and part 10 drive pins.  
If these edges are worn the lock bolt can slip off one drive pin and will drop into next, etc.
- NOTE: The wheel does not need to be removed from the crankshaft to check or replace part L lock bolt spring or part D or 8 lock bolt. The wheel can be slid on the shaft far enough to replace these parts. As a matter of safety, it is wise to substitute a shaft retainer cap screw (147) approximately three inches longer than standard. This will keep the wheel from sliding off the shaft.

## **ORDERING PARTS**

When ordering parts for any size press, determine the part desired from the labeled charts and order accordingly. Always designate the **SIZE** and **SERIAL NUMBER OF THE PRESS**, the **LETTER** or the **NUMBER** of the part and the **QUANTITY** desired. The serial number of the press is stamped on the lower end of the left gib housing or on a specification plate.

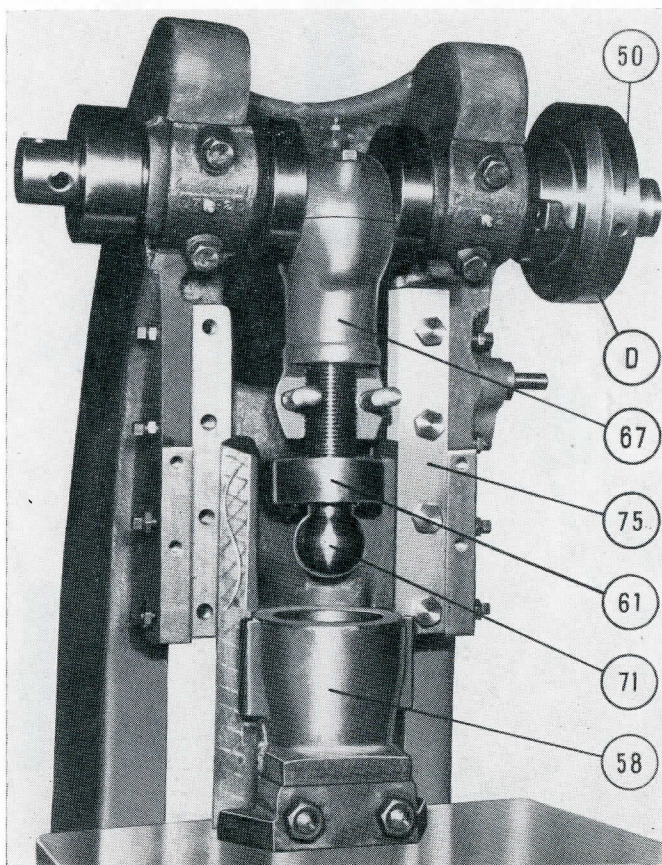
**EXAMPLE:** Latch for a Model 3 press would be ordered thus:

1 Part 112-3 Latch for Model 3 press, Serial 56001.

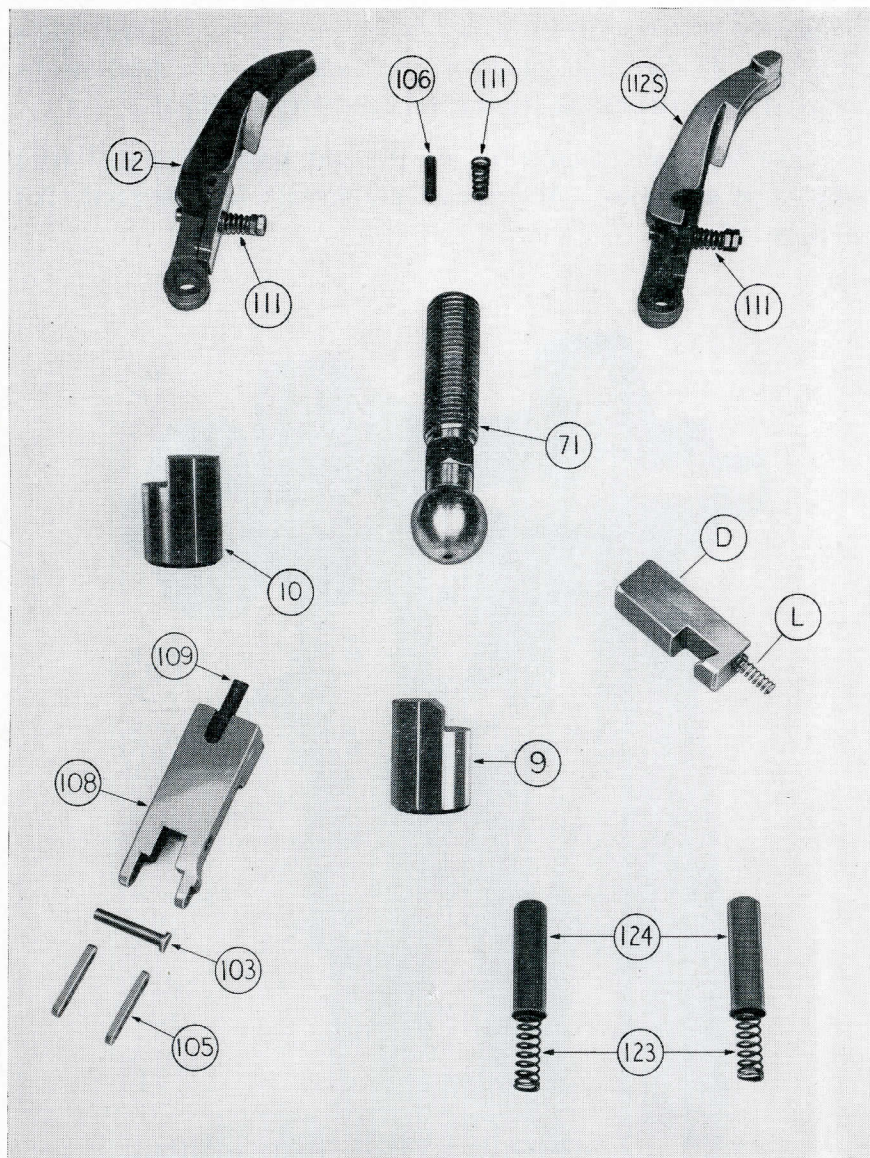
## LOCK BOLT

The lock bolt (D or 8) is a very important part of the press and can cause an endless amount of trouble if not kept well lubidicated and clean. To remove the lock bolt it is not necessary to completely remove the flywheel from the press. Simply slide the wheel off shaft the length of the lock bolt. It then can be removed from the crank for inspection or replacement.

The lock bolt should be smooth and kept lubricated with light oil at all times. Also grease crankshaft face marked (X) on page 17.



# PARTS

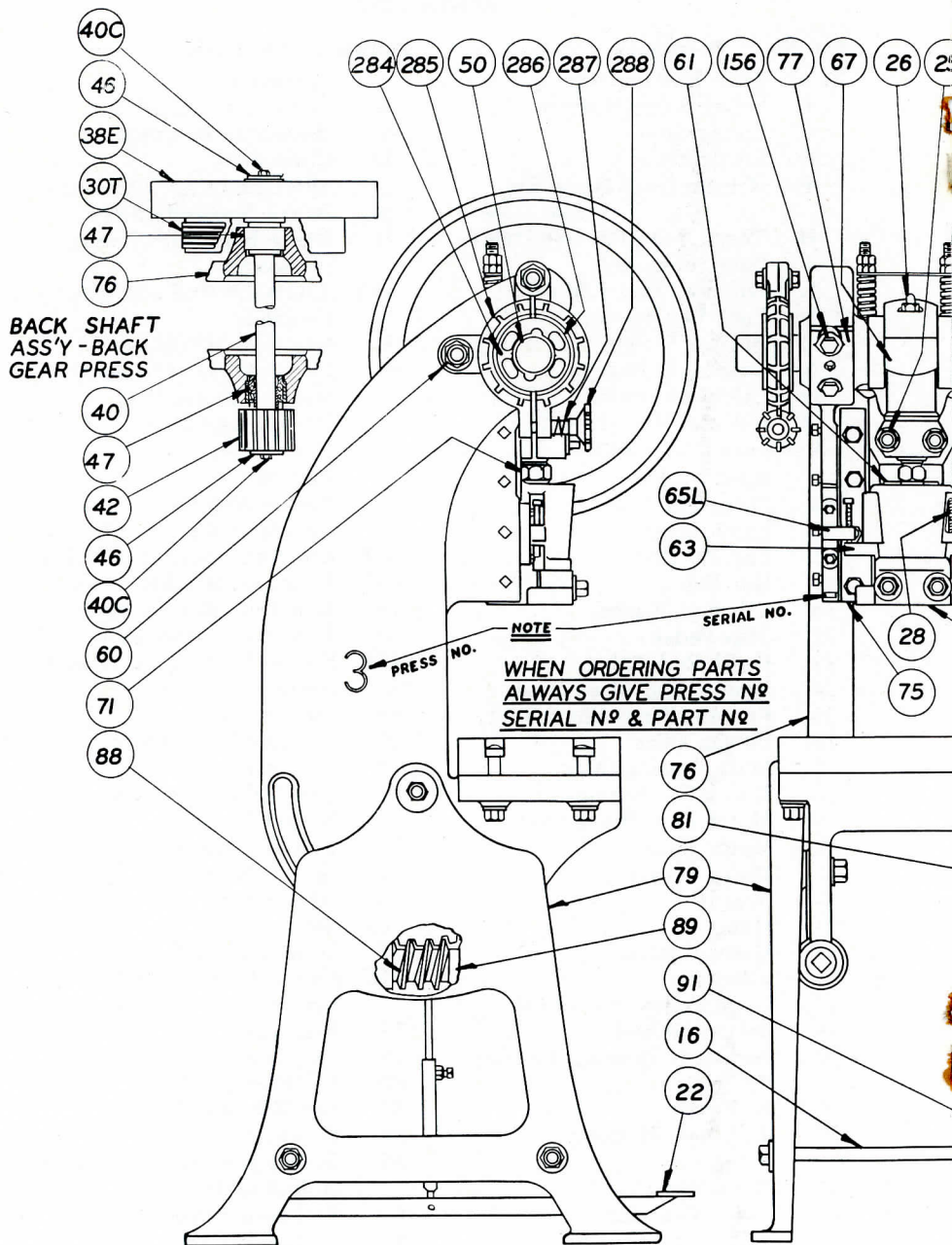


# MASTER PARTS LIST — O.B.I. PRESSES

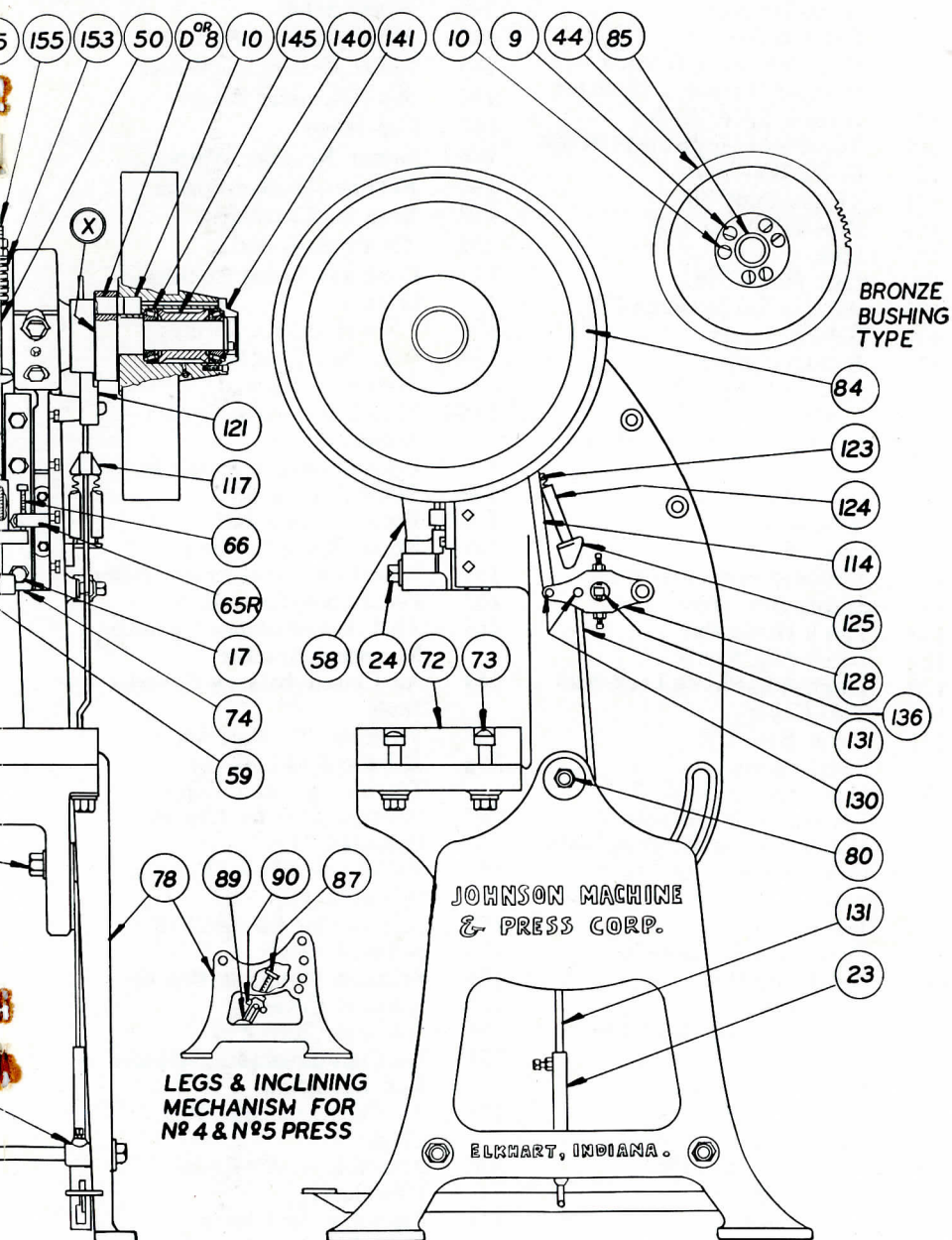
## PARTS LIST

Part No.	Description	Part No.	Description
A	Shaft End Cap Pin		(Obsolete)
B	Safety Stop (obsolete)	46	Backshaft End Plate
C	Spring Stop	47	Backshaft Bearings
D	Lock Bolt	50	Crankshaft
F	Release Lever Hinge Pin	51	Shaft End Cap (Obsolete)
	(old style)	54	Brake Arm (Obsolete)
H	Toggle Joint Pin (old style)	55	Brake Band with Lining
I	Cam (obsolete)		(Obsolete)
K	Balance Lever (old style)	55A	Automatic Brake Release
L	Lock Bolt Spring		Complete
M	Balance Weight (old style)	56	Eye Bolt (Obsolete)
N	Cover (old style)	57	Eye Bolt Pin (Obsolete)
O	Latch (old style)	58	Ram — Lower
P	Release Rod (old style)	59	Ram Clamp Block — Lower
8	Lock Bolt (Wide)	60	Brake Stud
9	Back Up Pin	61	Ball Nut
10	Drive Pin	62	Bronze Ball Seat
15	Latch Lever	63	Knockout Bar
16	Leg Tie Rod	65R	Knockout Bracket — Right
17	Gib Bolt	65L	Knockout Bracket — Left
18	Gib Bolt Washer	66	Knockout Bracket Screw
22	Trip Pedal	67	Pitman or Upper Ram
23	Pedal Rod Tube	67C	Bronze Bushing for Pitman
24	Ram Clamp Block Stud		Bearing
25	Pitman Clamp Block Stud	68	Pitman Cap
26	Pitman Oiler	69	Pitman Clamp Block
27	Main Bearing Oiler	70	Gib Oiler
28	Knock Out Springs	71	Ram Adjusting Screw
29	Motor Base Hinge Stud	72	Bolster Plate
30	Motor Base	73	Bolster Plate Bolts
31	Motor Sheave	74	Gib — Right
32	Guard	75	Gib — Left
33	Motor	76	Bed
34	Motor Control	77	Main Bearing Cap
35	V-Belts	77C	Bronze Bushing for Main
37	Loose Pulley (Obsolete)		Bearing
38	Balance Wheel	78	Right Leg
39	Backshaft Housing Bushing	79	Left Leg
	(Obsolete)	80	Leg Bolt and Nut
40	Backshaft	81	Leg Bolt with Hex Nut
41	Backshaft Housing	84	Flywheel
	(Obsolete)	85	Bronze Bushing for Flywheel
42	Pinion Gear		or Bull Gear
43	Pinion Gear Key	87	Reclining Screw
44	Bull Gear	88	Reclining Worm
45	Loose Pulley Bushing	89	Reclining Bracket

# PARTS



# CHART



## PARTS LIST

Part No.	Description	Part No.	Description
90	Reclining Nut	143	Wheel Shims
91	Pedal Guide	144	Alemite Grease Fitting
92	Ram Adjusting Wrench	145	Roller Bearing for Wheel
93	Spanner Wrench (Obsolete)	146	Shaft Retainer Washer
100	Release Lever Roller	147	Cap Screw
101	Top Cover Adjustment Screw	148	Grease Retainer Washer
102	Cover Bolt 7/16	149	Retainer Washer Spring
103	Toggle Joint Pin	150	Ring for Crankshaft
104	Booster Spring Bolt	151	Tie Rods — Bed
105	Links	152	Complete Spring Counter- balance
106	Link Hinge Pin	153	Counterbalance Springs
107	Balance Lever Hinge Pin	154	Bijur One Shot Lubricating System — Manual
108	Balance Lever	154B	Bijur Lubrication System — Automatic
109	Booster Spring	155	Counterbalance Spring Rods
110	Latch Spring Bolt	156	Main Bearing Studs
111	Latch Taper Spring	158	Ring for Backshaft
112	Latch Assembly including 110-111	159	Brake Hinge Bushing
113	Cover Bolt 1/2"	161	Wheel Pin Replacement Billet
114	Release Rod	162	Pedal Shoulder Bolt
115	Shock Pad	163	Air Counterbalance Cylinder Mounting Bracket
116	Bottom Cover Adj. Screw	164	Air Counterbalance Cylinder Rods
117	Spring Adj. Slide	165	Yoke for "C" Bal. Rods
118	Latch Hinge Pin	166	Release Rod Link for Electric operated Trip —
119	Latch Adj. Sleeve	167	Solenoid Link for Electric Operated Trip
120	Latch Adj. Sleeve Lock Nut	168	Trip Lever Pin for Electric Operated Trip
121	Trip Cover	169	Solenoid for Electric Trip
122	Cover Bolt 5/8	170	Solenoid Clevis
123	Pedal Spring	171	Solenoid Mounting Bracket
124	Pedal Spring Guide Tube	172	Solenoid Cover
125	Bottom Spring Bracket	173	Solenoid Clevis Pin
126	Bottom Spring Bracket Bolts	174	Air Counterbalance Cylinder Rod Extension
127	Upper Release Rod Adj. Screw	175	Air Counterbalance Rod Clevis
128	Trip Lever	200	Assembly — Air Brake (Obsolete)
129	Trip Lever Hinge Bolt	225	Assembly Air Clutch
130	Pedal Rod Pin	226	Left Sleeve (Obsolete)
131	Pedal Rod		
132	Bottom Release Rod Adj. Screw		
133	Safety Stop Screw		
134	Alemite Fitting		
135	Adj. Bracket Screw		
136	Trip Lever Stop Pin		
140	Bearing Spacer		
141	Wheel Cover		
142	Cap Screw		

## PARTS LIST

Part No.	Description	Part No.	Description
227	Right Sleeve	288	Brake Handwheel
228	Bearing Retainer	289	O-Ring for Air Brake
229	Clutch Hub	325	Hydraulic Inclining Assembly
230	Key for Air Clutch Hub	326	Hydraulic Inclining Assembly Piston
231	Grease Seal (2)	328	Hydraulic Inclining Assembly Base End
232	Wichita Air Clutch (Complete)	329	Hydraulic Inclining Assembly Piston Clevis
233	Wichita Quick Release Valves	330	Hydraulic Inclining Assembly Piston End
234	Roto Seal	331	Hydraulic Inclining Assembly Dirt Seal Retainer
235	Clutch Center Plate	332	Hydraulic Inclining Assembly Cap
236	Clutch Ring and Back Plate	333	Hydraulic Inclining Assembly Hinge Pin
237	Clutch Airtube Holding Plate	334	Hydraulic Inclining Assembly Orifice
238	Clutch Pressure Plate	335	Hydraulic Inclining Assembly Clevis For-web
239	Clutch Friction Disc	336	Hydraulic Inclining Assembly Base
240	Clutch Airtube	337	Hydraulic Inclining Assembly Bushing ( $1\frac{7}{8} \times 2\frac{3}{8}$ OD x $\frac{5}{8}$ )
241	Surge Tank	338	Hydraulic Inclining Assembly Dirt Seal (262 FF 128)
242	Surge Tank Mounting Plate	339	Hydraulic Inclining Assembly O-Ring (AN-6227-29)
243	Foot Switch	340	Hydraulic Inclining Assembly O-Ring (An-6227-35)
244	Solenoid Valve	341	Hydraulic Inclining Assembly Pump (#160 Pump with 160 cu in Reserv.)
245	Regulator and Filter Unit	342	Hydraulic Inclining Assembly Rod End
246	Check Valve	343	Hydraulic Inclining Assembly Base Extensions
247	Electrical Control Box	344	Hydraulic Inclining Assembly Bushing ( $1\frac{3}{4}$ ID x 2 OD $\frac{1}{2}$ )
248	Push Button Station	345	Hydraulic Inclining Assembly Piston Rod Wiper Ring (AN-6231-19)
249	Limit Switch	551	Brake Drum on Back Shaft
250	Band Brake Assembly (Obsolete)	552	Taper Sleeve for Brake Drum
251	Brake Drum (Obsolete)	553	Washer — Brake Stud Anchor
252	Taper Sleeve (Obsolete)		
253	Emergency Stop		
254	Start and Stop Station		
255	Cam for Limit Switch		
256	Clamp for Limit Switch Cam		
257	Mounting Bracket for Electric Control		
275	Air Cylinder Brake — Complete		
276	Piston		
277	Cylinder		
278	Cylinder Head		
279	Piston Rod		
280	Sleeve		
281	Piston Rod Cap		
284	Brake Drum		
285	Brake Complete with Lining		
286	Brake Lining		
287	Brake Tension Spring		

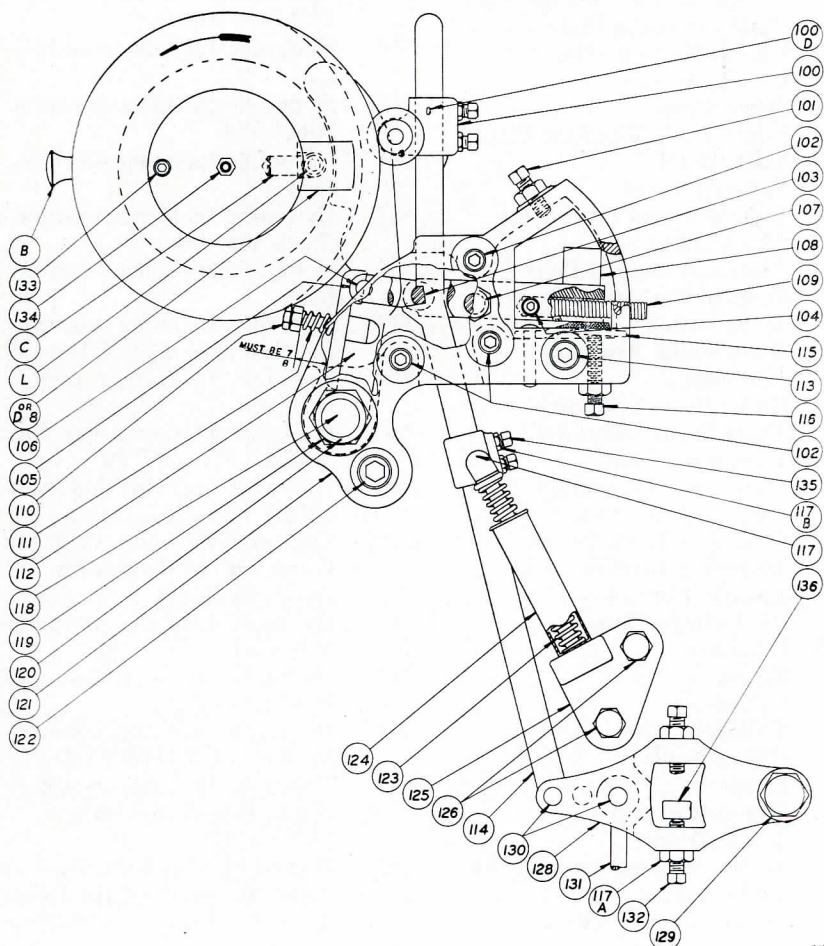
## Johnson New Style Tripping Device

Presses of the following serial numbers or higher are equipped with the JOHNSON NEW STYLE TRIPPING DEVICE AND NOT THE OLD STYLE

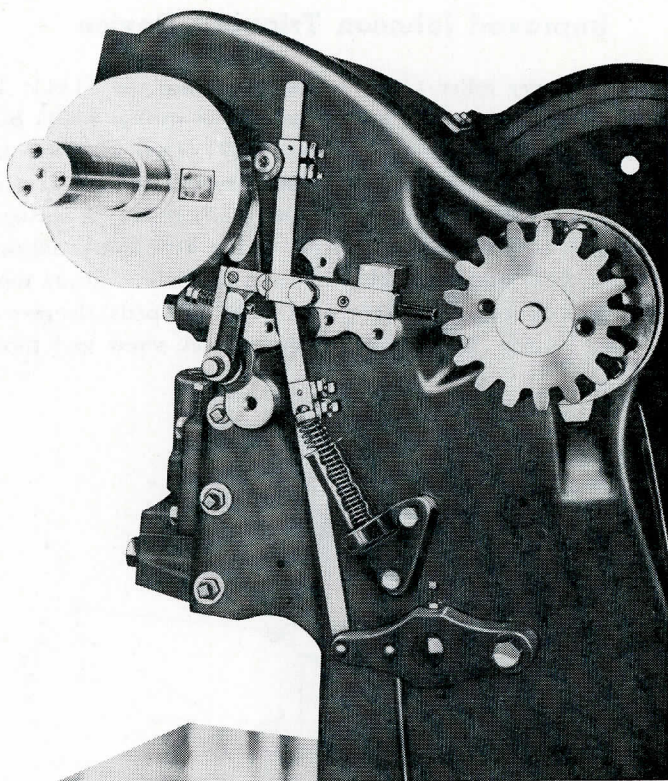
Model No. 1.....	Serial No. 400 and above
Model No. 2.....	Serial No. 400 and above
Model No. 3.....	Serial No. 400 and above
Model No. 4.....	Serial No. 500 and above
Model No. 5.....	Serial No. 500 and above

All presses with a lower serial number are equipped with the OLD STYLE tripping device and can be converted to the new style trip.

### NEW STYLE TRIP



PATENTED



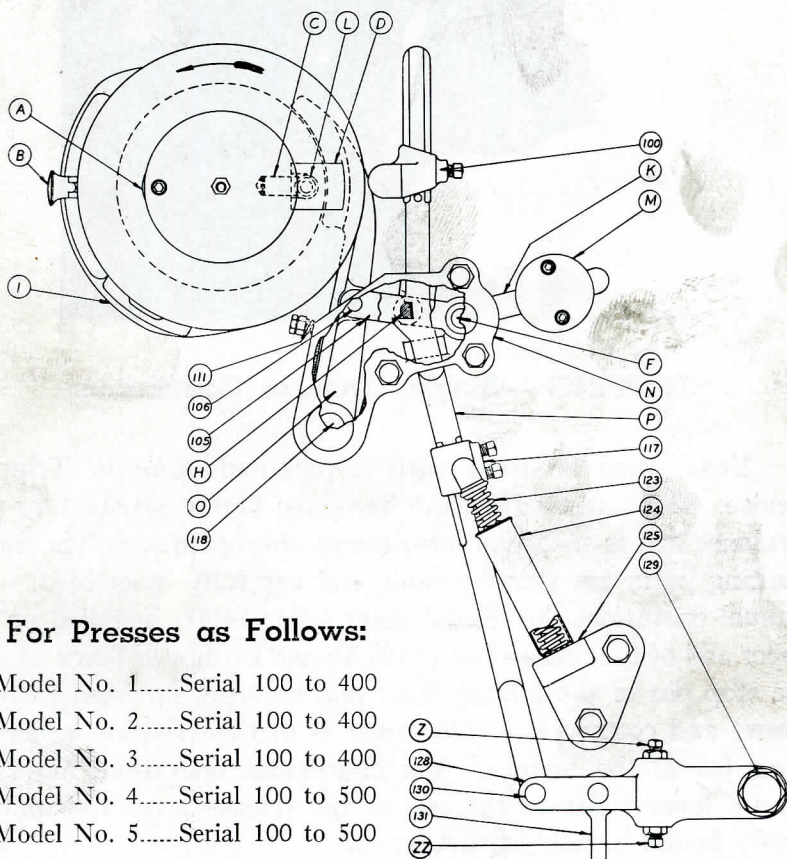
### TRIPPING — Single Cycle or Continuous

Your press is fitted with a patented *Johnson* Tripping Device. This patented feature has given highly satisfactory performance and is simple of adjustment and operation. The major working parts are sturdily built and carefully assembled. For manual operation, the release lever roller (100) installed on the upper end of the release rod (114) should be moved down against the stop pin of the release lever and securely fastened with set screws and cotter key. The roller is in this position when the press leaves the factory. For continuous operation, move the release lever roller to the top of the release lever rod and securely fasten it with two set screws.

## Instructions For Adjusting the Improved Johnson Tripping Device

Move release lever roller (100) to top of release rod (114). Back off top cover adjusting screw (101). Release tension of springs (123) by loosening set screws (135). Back off set screws (127), then with trip pedal up (lift the foot) adjust screw (132) until slot in release rod (114) slides over toggle joint pin (103) freely. Lock set screw (132) tight. With toggle joint pin (103) engaged in slot of release rod (114) and with foot pedal depressed, adjust set screw (127) until the radius of latch part (112) clears top of lock bolt (D) by  $\frac{1}{32}$ " , lock set screw (127) tight. With trip pedal depressed adjust set screw (101) leaving  $\frac{1}{8}$ " clearance between set screw and top of part

### OLD STYLE TRIP

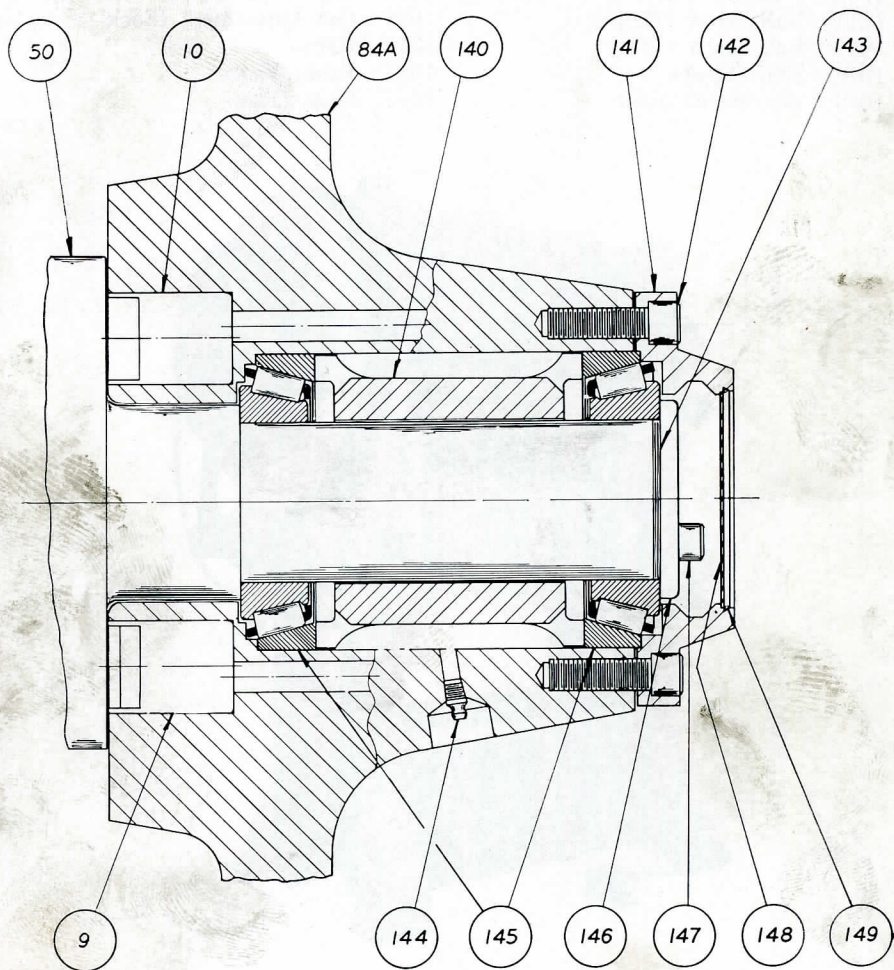


### For Presses as Follows:

Model No. 1.....Serial 100 to 400  
 Model No. 2.....Serial 100 to 400  
 Model No. 3.....Serial 100 to 400  
 Model No. 4.....Serial 100 to 500  
 Model No. 5.....Serial 100 to 500

No. 108, balance lever. Set screw (116) should be adjusted so that the center of pins No. 106, No. 103 and No. 107 are in a horizontal line when the release rod (114) is not engaged with pin No. 103. Just enough tension should be applied to spring No. 123 to lift the release rod (114) and foot pedal up into engaged position. When desiring to use as non-repeat, move part No. 100 down against stop pin on rod No. 114. For continuous stroke movement, move part No. 100 to top of rod No. 114, depress trip pedal and move pedal toward left of press and hook under off-set on pedal guide (91-A). Keep grease on pressure angle of lock bolt (No. D or 8), on pressure angle of latch (No. 112) and on the face of the crank that the latch contacts when disengaging lock bolt from flywheel. See face marked (X) on page 13.

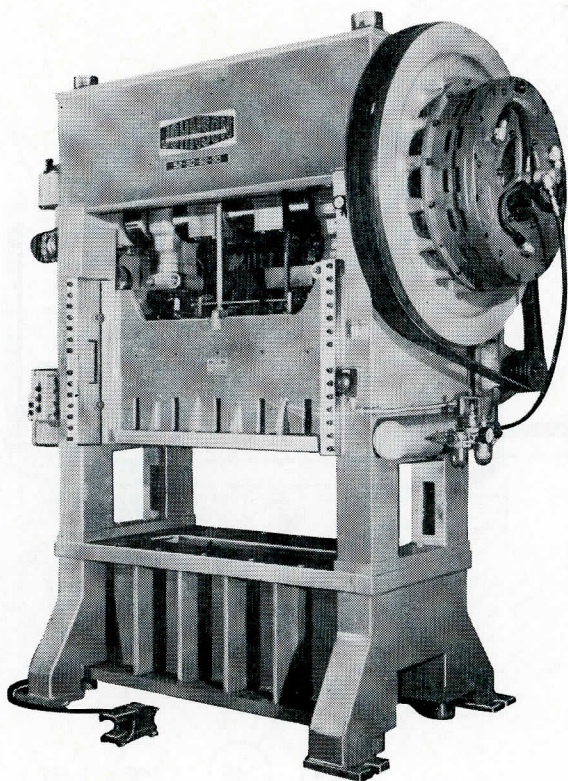
### Roller Bearing Flywheel



# STRAIGHT SIDE PRESSES (S2 Series)

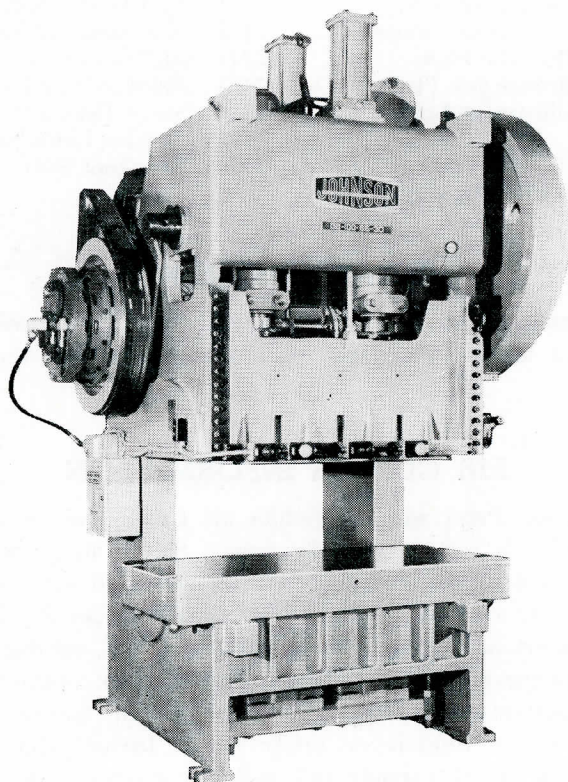
## PARTS LIST

Part No.	Description	Part No.	Description
1001	Crown	1015	Bevel Gear (Ram Adj.)
1002	Right Column	1016	Bevel Gear Pinion
1003	Left Column	1017	Flywheel
1004	Base	1021	Ball Seat
1005	Bearing Caps	1022	Spacer
1006	Tie Rods	1025	Ram Adjustment Shaft
1007	Bolster Plate	1027	Front Steel Gib Plate
1008	Crankshaft	1028	Front Bronze Gib Plate
1009	Pitman (Right)	1029	Rear Steel Gib Plate
1010	Pitman (Left)	1030	Rear Bronze Gib Plate
1011	Ball Screw (Right)	1031	Gib Adjustment Block
1012	Ball Screw (Left)	1032	Ram
1013	Shaft Sleeve	1033	Brake Shoes
1014	Bearing Retainer	1055	Surge Tank



## PARTS LIST

Part No.	Description	Part No.	Description
1056	Regulator Filter	1111	Spur Gear (Ram Adj.)
1057	Air C'Balance Cylinder	1112	Knockout Spring Retainer
1059	Air Brake (See Page 29)	1117	Sleeve for Ram Adj.
1076	Ram Adjustment Bracket	1118	Bar to Mount U.S. Varidrive
1077	Ram Adjustment Stub Shaft	1119	Bar to Mount U.S. Varidrive
1078	Air Clutch (See Page 28)	1120	Washer for Gib Adj. Block
1079	Ball Nut	1121	Flywheel Guard
1082	Backshaft	1122	Rototimer Guard
1085	Taper Sleeve	1123	Shaft End Plate
1087	Pinion Gear	1124	Knockout Post
1088	Bull Gear	1125	Air C'Balance Rod — End
1094	Tie Rod Nuts	1126	Air C'Bal. Connecting Sleeve
1102	Backshaft Bearings	1127	Air C'Bal. Ram Stud
1104	Motor Base	1128	Air C'Bal. Rod Coupling
1110	Spur Gear (Ram Adj.)		



## GAP PRESSES (G2 Series)

### PARTS LIST

Part No.	Description	Part No.	Description
2001	Frame	2056	Regulator Filter
2005	Bearing Caps	2057	Air C'Balance Cylinder
2007	Bolster Plate	2059	Air Brake (See Page 29)
2008	Crankshaft	2076	Ram Adjustment Bracket
2009	Pitman (Right)	2077	Ram Adjustment Stub Shaft
2010	Pitman (Left)	2078	Air Clutch (See Page 28)
2011	Ball Screw (Right)	2079	Ball Nut
2012	Ball Screw (Left)	2080	Leg (Right)
2013	Shaft Sleeve	2081	Leg (Left)
2014	Bearing Retainer	2082	Backshaft
2015	Bevel Gear (Ram Adj.)	2087	Pinion Gear
2016	Bevel Gear Pinion	2088	Bull Gear
2017	Flywheel	2096	Leg Tie Rods
2021	Ball Seat	2102	Backshaft Bearing
2022	Spacer	2110	Spur Gear (Ram Adj.)
2025	Ram Adjustment Shaft	2111	Spur Gear (Ram Adj.)
2028	Front Bronze Gib Plate	2112	Knockout Spring Retainer
2029	Rear Steel Gib Plate	2113	Bull Gear Guard
2030	Rear Bronze Gib Plate	2114	Balance Wheel Guard
2031	Gib Adjustment Block	2115	Surge Tank (Air C'Balance)
2032	Ram	2116	Cam for Limit Switch
2033	Brake Shoes	2124	Knockout Post
2055	Surge Tank (Air Clutch)		

### RAM ADJUSTMENT

Before attempting to adjust the ram, make sure the air pressure is "*on*" the *air counter balance*. This takes much of the strain from the ram adjustment.

### AIR CLUTCH INFORMATION

The Johnson Press with a Wichita air clutch and an air actuated, spring set brake is a very versatile press. Since this press is operated by electrical controls, the tripping can be varied to suit the individual needs of the user on various jobs. The standard controls include single stroke, continuous, and jog operations with either foot, one hand, two hand or combination tripping stations. The emergency stop control will stop the press in any portion of the stroke. Numerous special controls such as limit switch actuation of tripping or safety spring loaded pilots with micro switches in a die are also simply and easily incorporated into the electrical control.

The principal parts of an air clutch press which differ from a pin clutch press are the clutch and the brake. The air clutch is a disc type clutch which is engaged by air pressure while the air brake is opened or disengaged by air pressure. The brake is spring set and the clutch is spring released. In case of air pressure failure, the clutch will disengage and the brake will set. The clutch is self-adjusting. The friction discs can easily be replaced. Grease and oil should be kept away from these friction discs since grease will reduce the friction between the discs and cause clutch slippage.

## **WARNING!**

Before adjusting the ram —

1. Be sure air is on the counterbalance cylinder.
2. Be sure clamp bolts are loosened on Pitmans.

UPWARD turn lowers ram.

DOWNWARD turn raises ram.

## **PROPER AIR PRESSURE — 60 PSI**

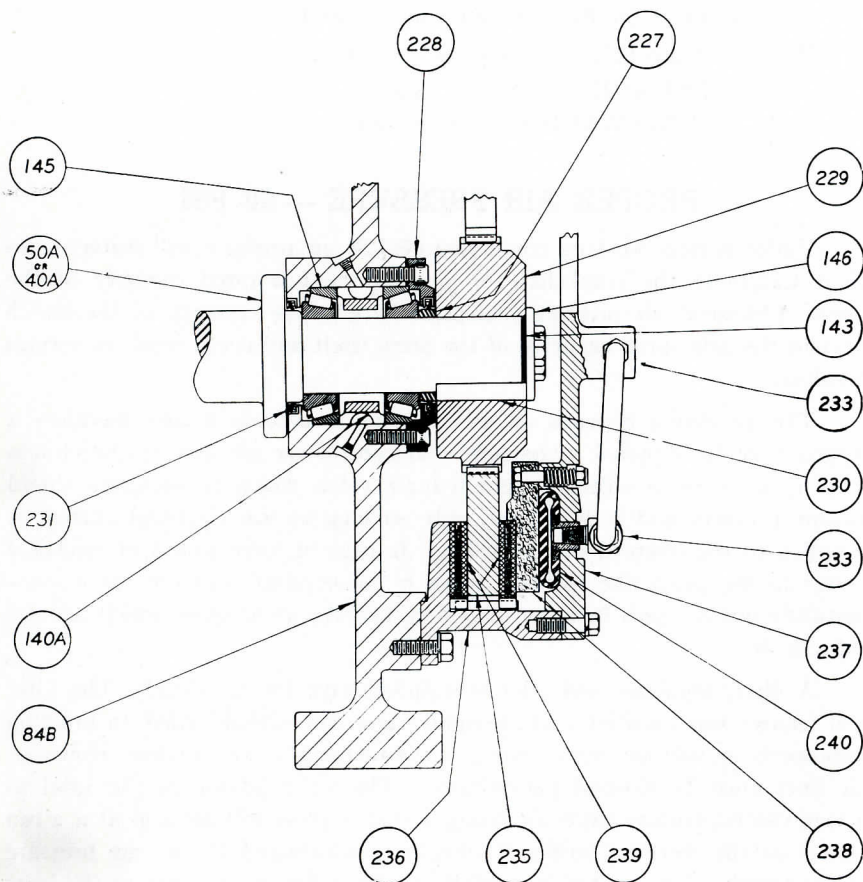
Under normal working conditions 60 PSI air pressure will deliver sufficient torque to the crankshaft to develop the full rated capacity of the press. Additional air pressure increases the effective capacity of the clutch beyond the safe rated capacity of the press itself and could result in serious breakage.

The air clutch depends on air pressure to actuate it and therefore a means must be supplied to regulate and control the air flow to the clutch. This is done by a solenoid actuated air valve which is normally closed to line pressure and is held open only so long as the electrical current is supplied to the solenoid of this valve. In case of interruption of electrical power to the press, the solenoid valve is de-energized and the valve automatically opens a port between the clutch and the atmosphere which releases the clutch.

A filter, regulator and oiler is supplied with the air clutch. The filter will remove small particles which could cause the solenoid valve to function improperly as well as remove much of the moisture in the air line. However, air lines must be drained periodically. The air regulator can be used as a load-control feature since the tonnage that a press will develop at a given height of the working stroke is directly proportioned to the air pressure of the clutch. This makes it possible to adjust the air pressure to the least amount required to do a given job and allowing the clutch to slip in case of a double header or a jam in the die. The oiler supplies lubrication to the solenoid valve and the quick release valves.

## QUICK RELEASE VALVES

The quick release valves are located on the clutch, roto-seal and brake. There are 2, 3 or 4 quick release valves part 233 on the clutch depending on the press size and one on the brake and roto-seal, part 234. These release or dump the air quickly from the clutch and brake to give fast action. If a quick release valve should stick *open*, air will escape and pressure will not build up in the clutch and the clutch will then stall when the load comes on. If a quick release valve sticks *closed*, the air will not be dumped through that valve and the press will tend to carry over-center. A properly working quick release valve will give a sharp report when the

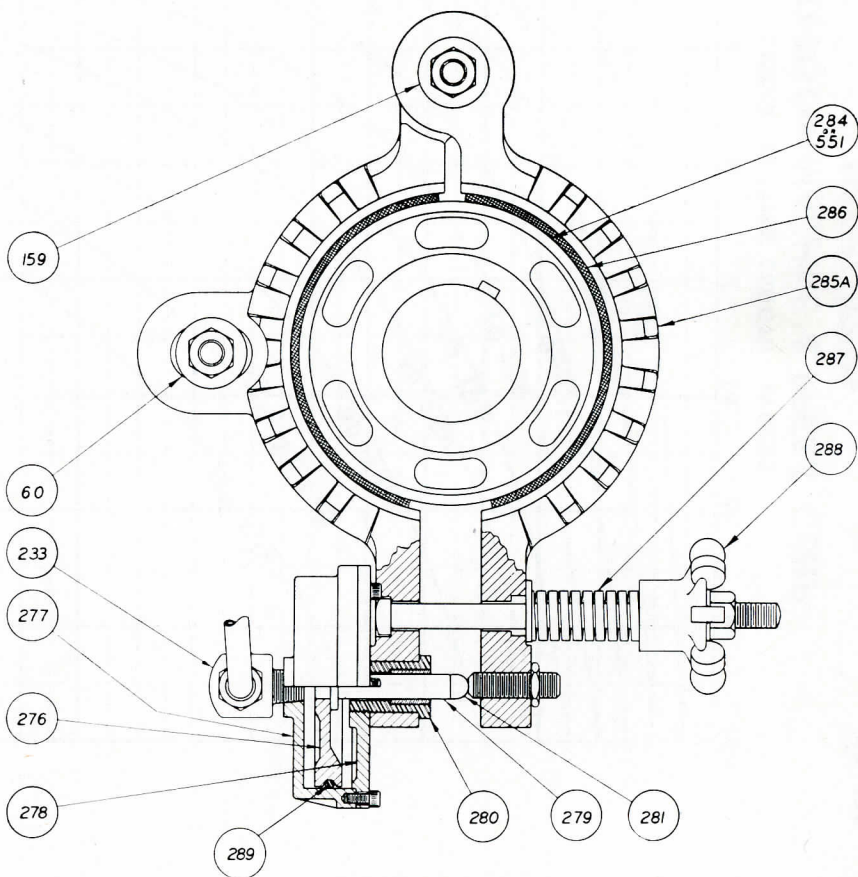


**AIR CLUTCH**

air is released through it. A "hiss" coming from a quick release valve indicates it is sticking. In checking these valves one should be certain that the plunger inside the valve is free and does not bind on the sides. Care should be taken in replacing the hose connections on the quick release valves. Never use a wrench — tighten only with hand pressure as excessive pressure will cause the plunger to bind within the quick release valve.

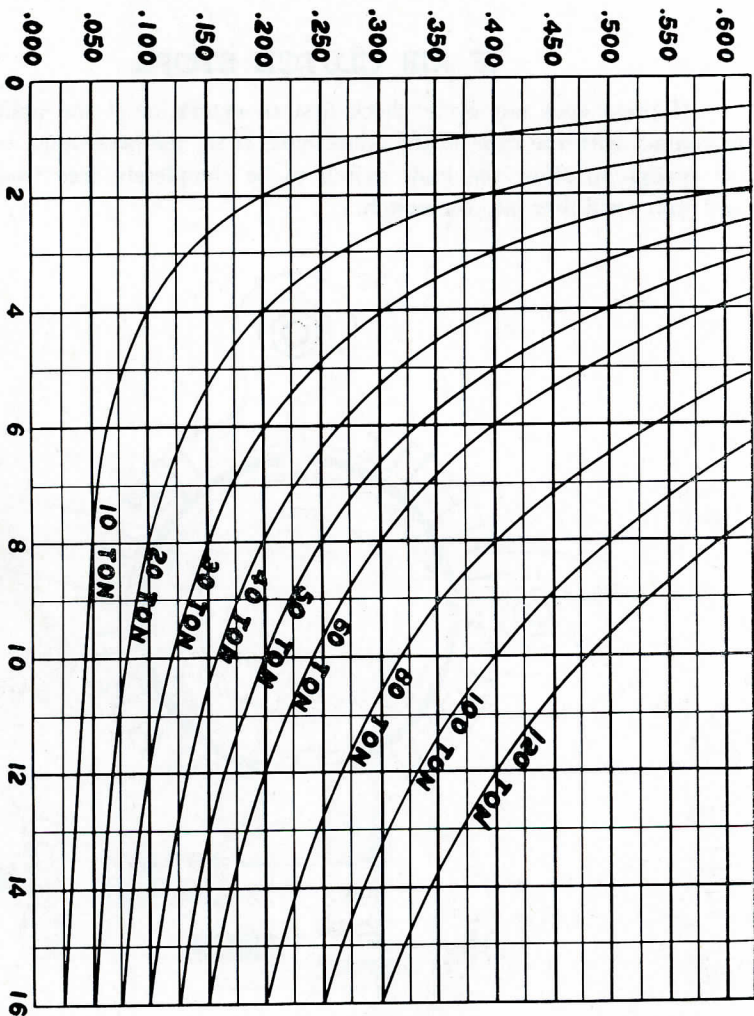
## IF AIR CLUTCH STOPS

If press does not cycle check first to determine if the limit switch is in contact with the cam on the crankshaft. If so, the press must be "jogged" far enough to allow the limit switch to be completely free from the cam and power will flow into the switch.



## AIR BRAKE

METAL THICKNESS - INCHES -  
 $S_s = 50,000 \text{ P.S.I.}$



JOHNSON MACHINE & PRESS CORP.

ELKHART INDIANA

NO. 102



